

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.**

Application Serial Number: 10/534,774  
Source: PG/10  
Date Processed by STIC: 5/20/05

# ***ENTERED***



PCT

## RAW SEQUENCE LISTING

DATE: 05/20/2005

PATENT APPLICATION: US/10/534,774

TIME: 13:31:46

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\05202005\J534774.raw

```

4 <110> APPLICANT: BRETT, Sara
5     HAMBLIN, Paul A.
6     OGILVIE, Louise
8 <120> TITLE OF INVENTION: Vaccine
11 <130> FILE REFERENCE: VB60547
C--> 13 <140> CURRENT APPLICATION NUMBER: US/10/534,774
14 <141> CURRENT FILING DATE: 2005-05-13
16 <150> PRIOR APPLICATION NUMBER: PCT/EP03/12793
17 <151> PRIOR FILING DATE: 2003-11-13
19 <150> PRIOR APPLICATION NUMBER: GB 0226422.7
20 <151> PRIOR FILING DATE: 2002-11-15
22 <160> NUMBER OF SEQ ID NOS: 24
24 <170> SOFTWARE: FastSEQ for Windows Version 4.0
26 <210> SEQ ID NO: 1
27 <211> LENGTH: 60
28 <212> TYPE: DNA
29 <213> ORGANISM: Hepatitis C virus
31 <400> SEQUENCE: 1
32 gaattcgcg cgcgcacccaaccccc aagccccagc gcaagaccaa gcggaacacc 60
35 <210> SEQ ID NO: 2
36 <211> LENGTH: 59
37 <212> TYPE: DNA
38 <213> ORGANISM: Hepatitis C virus
40 <400> SEQUENCE: 2
41 gaattcggat cctcatgcgc tagcgggggat ggtgaggcag ctcagcagcg ccagcagga 59
43 <210> SEQ ID NO: 3
44 <211> LENGTH: 55
45 <212> TYPE: DNA
46 <213> ORGANISM: Hepatitis C virus
48 <400> SEQUENCE: 3
49 gaattcgcg cgcgcacccaaccccc gcctacagcc agcagacccg gggac 55
51 <210> SEQ ID NO: 4
52 <211> LENGTH: 55
53 <212> TYPE: DNA
54 <213> ORGANISM: Hepatitis C virus
56 <400> SEQUENCE: 4
57 gaattcggat cctcaggatga ccacctccag gtcagcggac atgcacgcca tgatg 55
59 <210> SEQ ID NO: 5
60 <211> LENGTH: 46
61 <212> TYPE: DNA
62 <213> ORGANISM: Hepatitis C virus
64 <400> SEQUENCE: 5
65 gaattcgcg cgcgcacccaaccccc ttgggccaag catatgtgga acttca 46

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/534,774

DATE: 05/20/2005

TIME: 13:31:46

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\05202005\J534774.raw

```

67 <210> SEQ ID NO: 6
68 <211> LENGTH: 46
69 <212> TYPE: DNA
70 <213> ORGANISM: Hepatitis C virus
72 <400> SEQUENCE: 6
73 gaattcggat cctcagcaag gggaggagca gtcctcgttg atccac 46
75 <210> SEQ ID NO: 7
76 <211> LENGTH: 49
77 <212> TYPE: DNA
78 <213> ORGANISM: Hepatitis C virus
80 <400> SEQUENCE: 7
81 gaattcggc cgcacatgac catgtcctac acctggaccg gcgcctga 49
83 <210> SEQ ID NO: 8
84 <211> LENGTH: 49
85 <212> TYPE: DNA
86 <213> ORGANISM: Hepatitis C virus
88 <400> SEQUENCE: 8
89 gaattcggat cctcagcggg tgggcagcag gtagatgccg actccgacg 49
91 <210> SEQ ID NO: 9
92 <211> LENGTH: 191
93 <212> TYPE: PRT
94 <213> ORGANISM: Hepatitis C virus
96 <400> SEQUENCE: 9
97 Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
98 1 5 10 15
99 Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
100 20 25 30
101 Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
102 35 40 45
103 Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
104 50 55 60
105 Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Ala Trp Ala Gln Pro Gly
106 65 70 75 80
107 Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
108 85 90 95
109 Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
110 100 105 110
111 Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
112 115 120 125
113 Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
114 130 135 140
115 Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
116 145 150 155 160
117 Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
118 165 170 175
119 Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala
120 180 185 190
123 <210> SEQ ID NO: 10
124 <211> LENGTH: 632

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/534,774

DATE: 05/20/2005

TIME: 13:31:46

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\05202005\J534774.raw

```

125 <212> TYPE: PRT
126 <213> ORGANISM: Hepatitis C virus
128 <400> SEQUENCE: 10
129 Met Ala Pro Ile Thr Ala Tyr Ser Gln Gln Thr Arg Gly Leu Leu Gly
130 1 5 10 15
131 Cys Ile Ile Thr Ser Leu Thr Gly Arg Asp Lys Asn Gln Val Glu Gly
132 20 25 30
133 Glu Val Gln Val Val Ser Thr Ala Thr Gln Ser Phe Leu Ala Thr Cys
134 35 40 45
135 Ile Asn Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly Ser Lys Thr
136 50 55 60
137 Leu Ala Gly Pro Lys Gly Pro Ile Thr Gln Met Tyr Thr Asn Val Asp
138 65 70 75 80
139 Gln Asp Leu Val Gly Trp Gln Ala Pro Pro Gly Ala Arg Ser Met Thr
140 85 90 95
141 Pro Cys Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala
142 100 105 110
143 Asp Val Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu
144 115 120 125
145 Ser Pro Arg Pro Val Ser Tyr Leu Lys Gly Ser Val Gly Gly Pro Leu
146 130 135 140
147 Leu Cys Pro Ser Gly His Val Val Gly Ile Phe Arg Ala Ala Val Cys
148 145 150 155 160
149 Thr Arg Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Met
150 165 170 175
151 Glu Thr Thr Met Arg Ser Pro Val Phe Thr Asp Asn Ser Ser Pro Pro
152 180 185 190
153 Ala Val Pro Gln Thr Phe Gln Val Ala His Leu His Ala Pro Thr Gly
154 195 200 205
155 Ser Gly Lys Ser Thr Lys Val Pro Ala Ala Tyr Ala Ala Gln Gly Tyr
156 210 215 220
157 Lys Val Leu Val Leu Asn Pro Ser Val Ala Ala Thr Leu Gly Phe Gly
158 225 230 235 240
159 Ala Tyr Met Ser Lys Ala His Gly Ile Asp Pro Asn Ile Arg Thr Gly
160 245 250 255
161 Val Arg Thr Ile Thr Thr Gly Ala Pro Ile Thr Tyr Ser Thr Tyr Gly
162 260 265 270
163 Lys Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Ile Ile
164 275 280 285
165 Ile Cys Gln Glu Cys His Ser Thr Asp Ser Thr Thr Ile Leu Gly Ile
166 290 295 300
167 Gly Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val
168 305 310 315 320
169 Leu Ala Thr Ala Thr Pro Pro Gly Ser Val Thr Val Pro His Pro Asn
170 325 330 335
171 Ile Glu Glu Val Ala Leu Ser Asn Asn Gly Glu Ile Pro Phe Tyr Gly
172 340 345 350
173 Lys Ala Ile Pro Ile Glu Ala Ile Lys Gly Gly Arg His Leu Ile Phe
174 355 360 365

```

## RAW SEQUENCE LISTING

DATE: 05/20/2005

PATENT APPLICATION: US/10/534,774

TIME: 13:31:46

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\05202005\J534774.raw

```

175 Cys His Ser Lys Lys Lys Cys Asp Glu Leu Ala Ala Lys Leu Ser Gly
176      370      375      380
177 Leu Gly Leu Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ser Val
178 385      390      395      400
179 Ile Pro Thr Ser Gly Asp Val Val Val Val Ala Thr Asp Ala Leu Met
180      405      410      415
181 Thr Gly Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Thr Cys
182      420      425      430
183 Val Thr Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile Glu
184      435      440      445
185 Thr Thr Thr Val Pro Gln Asp Ala Val Ser Arg Ser Gln Arg Arg Gly
186      450      455      460
187 Arg Thr Gly Arg Gly Arg Ser Gly Ile Tyr Arg Phe Val Thr Pro Gly
188 465      470      475      480
189 Glu Arg Pro Ser Gly Met Phe Asp Ser Ser Val Leu Cys Glu Cys Tyr
190      485      490      495
191 Asp Ala Gly Cys Ala Trp Tyr Glu Leu Thr Pro Ala Glu Thr Ser Val
192      500      505      510
193 Arg Leu Arg Ala Tyr Leu Asn Thr Pro Gly Leu Pro Val Cys Gln Asp
194      515      520      525
195 His Leu Glu Phe Trp Glu Ser Val Phe Thr Gly Leu Thr His Ile Asp
196      530      535      540
197 Ala His Phe Leu Ser Gln Thr Lys Gln Ala Gly Asp Asn Phe Pro Tyr
198 545      550      555      560
199 Leu Val Ala Tyr Gln Ala Thr Val Cys Ala Arg Ala Gln Ala Pro Pro
200      565      570      575
201 Pro Ser Trp Asp Gln Met Trp Lys Cys Leu Ile Arg Leu Lys Pro Thr
202      580      585      590
203 Leu His Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Ala Val Gln Asn
204      595      600      605
205 Glu Val Thr Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala Cys Met
206      610      615      620
207 Ser Ala Asp Leu Glu Val Val Thr
208 625      630
211 <210> SEQ ID NO: 11
212 <211> LENGTH: 214
213 <212> TYPE: PRT
214 <213> ORGANISM: Hepatitis C virus
216 <400> SEQUENCE: 11
217 Met Phe Trp Ala Lys His Met Trp Asn Phe Ile Ser Gly Ile Gln Tyr
218 1      5      10      15
219 Leu Ala Gly Leu Ser Thr Leu Pro Gly Asn Pro Ala Ile Ala Ser Leu
220      20      25      30
221 Met Ala Phe Thr Ala Ser Ile Thr Ser Pro Leu Thr Thr Gln Asn Thr
222      35      40      45
223 Leu Leu Phe Asn Ile Leu Gly Gly Trp Val Ala Ala Gln Leu Ala Pro
224      50      55      60
225 Pro Ser Ala Ala Ser Ala Phe Val Gly Ala Gly Ile Ala Gly Ala Ala
226 65      70      75      80

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/534,774

DATE: 05/20/2005

TIME: 13:31:46

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\05202005\J534774.raw

```

227 Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val Asp Ile Leu Ala Gly
228      85      90      95
229 Tyr Gly Ala Gly Val Ala Gly Ala Leu Val Ala Phe Lys Val Met Ser
230      100     105     110
231 Gly Glu Val Pro Ser Thr Glu Asp Leu Val Asn Leu Leu Pro Ala Ile
232      115     120     125
233 Leu Ser Pro Gly Ala Leu Val Val Gly Val Val Cys Ala Ala Ile Leu
234      130     135     140
235 Arg Arg His Val Gly Pro Gly Glu Gly Ala Val Gln Trp Met Asn Arg
236 145      150     155     160
237 Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val Ser Pro Thr His Tyr
238      165     170     175
239 Val Pro Glu Ser Asp Ala Ala Ala Arg Val Thr Gln Ile Leu Ser Ser
240      180     185     190
241 Leu Thr Ile Thr Gln Leu Leu Lys Arg Leu His Gln Trp Ile Asn Glu
242      195     200     205
243 Asp Cys Ser Thr Pro Cys
244      210
247 <210> SEQ ID NO: 12
248 <211> LENGTH: 592
249 <212> TYPE: PRT
250 <213> ORGANISM: Hepatitis C virus
252 <400> SEQUENCE: 12
253 Met Ser Met Ser Tyr Thr Trp Thr Gly Ala Leu Ile Thr Pro Cys Ala
254 1      5      10      15
255 Ala Glu Glu Ser Lys Leu Pro Ile Asn Pro Leu Ser Asn Ser Leu Leu
256      20      25      30
257 Arg His His Asn Met Val Tyr Ala Thr Thr Ser Arg Ser Ala Ser Leu
258      35      40      45
259 Arg Gln Lys Lys Val Thr Phe Asp Arg Leu Gln Val Leu Asp Asp His
260      50      55      60
261 Tyr Arg Asp Val Leu Lys Glu Met Lys Ala Lys Ala Ser Thr Val Lys
262 65      70      75      80
263 Ala Lys Leu Leu Ser Ile Glu Glu Ala Cys Lys Leu Thr Pro Pro His
264      85      90      95
265 Ser Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys Asp Val Arg Asn Leu
266      100     105     110
267 Ser Ser Arg Ala Val Asn His Ile Arg Ser Val Trp Glu Asp Leu Leu
268      115     120     125
269 Glu Asp Thr Glu Thr Pro Ile Asp Thr Thr Ile Met Ala Lys Ser Glu
270      130     135     140
271 Val Phe Cys Val Gln Pro Glu Lys Gly Gly Arg Lys Pro Ala Arg Leu
272 145      150     155     160
273 Ile Val Phe Pro Asp Leu Gly Val Arg Val Cys Glu Lys Met Ala Leu
274      165     170     175
275 Tyr Asp Val Val Ser Thr Leu Pro Gln Ala Val Met Gly Ser Ser Tyr
276      180     185     190
277 Gly Phe Gln Tyr Ser Pro Lys Gln Arg Val Glu Phe Leu Val Asn Thr
278      195     200     205

```

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10/534,774

DATE: 05/20/2005

TIME: 13:31:47

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\05202005\J534774.raw

L:13 M:270 C: Current Application Number differs, Replaced Current Application Number